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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,693	11/26/2001	Thomas P. Beals	38-10(52036)B	3929
27161	7590	03/03/2004	EXAMINER	
MONSANTO COMPANY 800 N. LINDBERGH BLVD. ATTENTION: G.P. WUELLNER, IP PARALEGAL, (E2NA) ST. LOUIS, MO 63167			SANTOS, PATRICK J D	
			ART UNIT	PAPER NUMBER
			2171	3
DATE MAILED: 03/03/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/991,693

Applicant(s)

BEALS, THOMAS P.

Examiner

Patrick J Santos

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2 / 1-28-2002.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 9-10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,813,865 issued to Greenbowe et al. (hereafter Greenbowe '865) in view of U.S. Patent No. 5,960,440 issued to Brenner et al. (hereafter Brenner '440).

Claim 1:

Regarding Claim 1, Greenbowe '865 teaches a method for organizing laboratory procedure information, comprising:

- (a) defining a set of container types, wherein container types in said set of container types each have one or more positions capable of having content (Greenbowe '865: col. 4, lns. 26-46; col. 7, lns. 1-42);
- (b) defining a set of operation types (Greenbowe '865: col. 4, lns. 26-46; col. 6, lns. 31-32);
- (c) defining a set of measurement types (Greenbowe '865: col. 4, lns. 26-46; col. 6, lns. 33-34);

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- (d) performing one or more operations, wherein performing any one of said operations creates a new container with a unique identifier, and wherein said new container with a unique identifier is one of said container types in said set of container types (Greenbowe '865: col. 4, lns. 26-46; col. 8, lns. 18-24); and
- (e) performing one or more measurements, wherein performing any one of said measurements results in associating data with content in one or more of said new containers (Greenbowe '865: col. 4, lns. 26-60; col. 8, lns. 18-24; col. 8, lns. 54-59).

However, Greenbowe '865 does not explicitly teach a database.

Brenner '440 teaches a database (Brenner '440: col. 3, lns. 31-37; col. 3, lns. 45-55; col. 8, lns. 17-29).

It would have been obvious for a person having ordinary skill in the art to persist the procedure information of Greenbowe '865 in the database of Brenner '440. The motivation to combine is suggested by Brenner '440 which teaches that storing said information in the database of Brenner '440 results in a superior searching and indexing capability (Brenner '440: col. 1, lns. 43-49). Moreover, note that the system of Brenner '440 is directed to kitchen/cookbook recipes which are analogous to chemistry laboratory procedures and as a result the data schema of Brenner '440 is similar to that of the data structure of Greenbowe '865 (Brenner '440: col. 8, lns. 23-29) thus further suggesting replacing the kitchen/cookbook recipes of Brenner '440 with the chemistry laboratory procedure simulations of Greenbowe '865.

Claim 2:

Regarding Claim 2, Greenbowe '865 teaches all the limitations of Claim 1 (supra). Further note that Greenbowe '865 and Brenner '440 in combination teach defining a set of process types wherein performing each process types in said set of process types creates a change of state of the content of a position in a container (Greenbowe '865: col. 8, lns. 54-59; col. 9, lns. 41-55). Moreover, note that in the example experiment disclosed by Greenbowe '865 and Brenner '440 in combination, state changes in the container, material, and apparatus are all indicated.

Claim 3:

Regarding Claim 3, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 2 (supra). Further note that Greenbowe '865 and Brenner '440 in combination teach performing one or more processes on one or more containers (Greenbowe '865: col. 4, lns. 26-46; Fig. 6). Moreover, note that the example figure shows multiple containers.

Claim 4:

Regarding Claim 4, Greenbowe '865 and Brenner '440 in combination teaches all the limitations of Claim 3 (supra). Further note that Greenbowe '865 and Brenner '440 in combination further teach that each process type has a defined protocol (Greenbowe '865: col. 15, lns. 4-15). The guidance of Greenbowe '865 and Brenner '440 in combination is understood to mean guidance on all objects accessible by a user within the chemistry laboratory simulation of Greenbowe '865 and Brenner '440 in combination and thus reads on a protocol associated with a process type. Moreover, Greenbowe '865 and Brenner '440 in combination teach a start time and a finish time associated with a process (Brenner '440: col. 1, lns. 60-62).

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Claim 5:

Regarding Claim 5, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 1 (supra). Further note that Greenbowe '865 and Brenner '440 in combination teach that each created container has an associated container map that defines an arrangement of positions in said created container and defines contents of each position in said created container (Greenbowe '865: col. 4, lns. 47-59). Greenbowe '865 and Brenner '440 in combination teach a "translating" operation on an "ensemble of objects specified in the application model into a detailed geometric representation of what is to be viewed on a monitor," which reads on an associated container map that defines an arrangement of positions. Moreover, the details of the "detailed geometric representation" reads on the disposition of the containers and the contents themselves as demonstrated in the examples put forth by Greenbowe '865 and Brenner '440 in combination (Greenbowe '865: col. 9, lns. 41-55).

Claim 6:

Regarding Claim 6, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 5 (supra). Further note that Greenbowe '865 and Brenner '440 in combination teach that a collection or set of containers share an associated container map that defines an arrangement of positions in said collection or set of containers and defines contents of each position in said collection or set of created containers (Greenbowe '865: col. 4, lns. 47-59). The details of the "detailed geometric representation" reads on the relative positions of the containers to each other.

Claims 9 and 10:

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Regarding Claims 9 and 10, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 1 (supra). Further note that Greenbowe '865 and Brenner '440 in combination teach that each operation type and measurement type has an associated protocol (Greenbowe '865: col. 15, lns. 4-15). The guidance of Greenbowe '865 and Brenner '440 in combination is understood to mean guidance on all objects accessible by a user within the chemistry laboratory simulation of Greenbowe '865 and thus reads on a protocol associated with an operation type and/or a measurement type.

Claim 12:

Regarding Claim 12, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 1 (supra). Claim 12 which depends on Claim 1, recites the additional limitation strictly with regards to an intended use. Since an intended use limitation is not a patentable distinction, Claim 12 is rejected over Greenbowe '865 and Brenner '440 in combination. MPEP § 2106 states, "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:

- (A) statements of intended use or field of use,
- (B) "adapted to" or "adapted for" clauses,
- (C) "wherein" clauses, or
- (D) "whereby" clauses.

This list of examples is not intended to be exhaustive."

Further refer to In re OTTO, OTTO, AND BRITTON, 136 USPQ 458.

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Furthermore, even if Claim 12 is not to be rejected under intended use, Claim 12 is rejected over prior art (Greenbowe '865 and Brenner '440 in combination) on the same basis as Claim 1 (*supra*).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenbowe '865 and Brenner '440 in view of the publication, "The Windows (TM) Interface, An Application Design Guide", from Microsoft Corporation (TM), published by Microsoft Press, 1992 (hereafter Microsoft '92).

Claim 7:

Regarding Claim 7, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 1 (*supra*). However, Greenbowe '865 and Brenner '440 in combination do not teach that each position within a container type is designated with a number.

Microsoft '92 teaches that each position is designated with a number (Microsoft '92, p. 32, Table 3.4, note items labeled "Tab" and "Shift+Tab"). It is well known in the art that windowing applications allow keyboard navigation of items in a window (in the case of Greenbowe '865 and Brenner '440 in combination, this includes containers and apparatus in a simulated experiment), using "tab order." Implicit in tab order is the designation of a number.

It would have been obvious for a person having ordinary skill in the art to apply the "tab order" of Microsoft '92 to the Greenbowe '865 and Brenner '440 combination. The motivation to combine same is suggested by Microsoft '92, which teaches the user

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interface principle that mouse and keyboard operations should be in parallel, and provides the benefits of a consistent user interface (Microsoft '92, p. 21, lns. 1-8).

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenbowe '865 and Brenner '440 in view of the publication, "OLE 2 (TM) Programmer's Reference, Volume One", from Microsoft Corporation (TM), published by Microsoft Press, 1993 (hereafter Microsoft '93).

Claim 8:

Regarding Claim 8, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 1 (supra). However Greenbowe '865 and Brenner '440 do not explicitly teach that one or more containers contain one or more other containers.

Microsoft '93 teaches the concept and programmatic mechanism for aggregation (a common means for the creation of composite objects and components) (Microsoft '93: pp. 36-39). Specifically, Microsoft '93 teaches that one or more containers contain one or more other containers.

It would have been obvious for a person having ordinary skill in the art to apply the aggregation and containment mechanisms of Microsoft '93 to the objects of Greenbowe '865 and Brenner '440 in combination. The motivation to combine same is suggested by Microsoft '93 which teaches examples the well known benefits of providing for compound objects (Microsoft '93: pp. 22-25). In general, the objects of Greenbowe '865 and Brenner '440 in combination that represent containers, apparatuses, and other "drag and droppable" items in the chemistry simulation (Greenbowe '865: col. 7, lns. 18-21) are enabled by the OLE 2 (TM) mechanism (Microsoft '93: p. 663). As such, the

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objects of Greenbowe '865 and Brenner '440 in combination have access to the OLE 2 (TM) aggregation mechanism and thus the containers contain one or more other containers.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenbowe '865 and Brenner '440 in view of U.S. Patent No. 5,946,471 issued to Voorhees et al. (hereafter Voorhees '471).

Claim 11:

Regarding Claim 11, Greenbowe '865 and Brenner '440 in combination teach all the limitations of Claim 1 (supra). However, Greenbowe '865 and Brenner '440 do not explicitly teach that performing a measurement is done with a single measurement type repeatedly over time for one or more containers.

Voorhees '471 teaches repeatably polling lab equipment in order to make measurements (Voorhees '471: Abstract). Specifically, Voorhees '471 teaches that performing a measurement is done with a single measurement type repeatedly over time for one or more containers.

It would have been obvious for a person having ordinary skill in the art to combine the repeated measurements of Voorhees '471 with the invention of Greenbowe '865 and Brenner '440 in combination. The motivation to accomplish said combination is suggested by Voorhees '471 which teaches that repeated measurements is desirable in a chemistry lab settings in order to detect trends over time in data (Voorhees '471: col. 1, lns. 43-59). Further note that Greenbowe '865 and Brenner '440 in combination teach

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the illustration of data trends (Greenbowe '865: col. 9, lns. 41-55) which lends itself to the teachings of Voorhees '471.

6. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenbowe '865 and Brenner '440 in view of U.S. Patent No. 6,190,868 issued to Rothberg et al. (hereafter Rothberg '868).

Claim 13:

Regarding Claim 13, Greenbowe '865 teaches a method for organizing information, comprising:

- defining a set of container types, wherein container types in said set of container types each have one or more positions capable of having content (Greenbowe '865: col. 4, lns. 26-46; col. 7, lns. 1-42);
- defining a set of operation types (Greenbowe '865: col. 4, lns. 26-46; col. 6, lns. 31-32);
- defining a set of measurement types (Greenbowe '865: col. 4, lns. 26-46; col. 6, lns. 33-34);
- defining a set of process types, wherein said set of process types (Greenbowe '865: col. 8, lns. 54-59; col. 9, lns. 41-55);
- performing one or more operations, wherein performing any one of said operations creates a new container with a unique identifier, and wherein said new container with a unique identifier is one of said container types in said set of container types (Greenbowe '865: col. 4, lns. 26-46; col. 8, lns. 18-24);

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- performing one or more processes on one or more of said new containers, wherein performing any one of said processes changes a state in one or more of said new containers (Greenbowe '865: col. 4, lns. 26-46; col. 8, lns. 18-24); and
- performing one or more measurements, wherein performing any one of said measurements results in associating data with content in one or more of said new containers (Greenbowe '865: col. 4, lns. 26-60; col. 8, lns. 18-24; col. 8, lns. 54-59).

However, Greenbowe '865 does not explicitly teach a database in order to record information or application to an RNA transcript profiling laboratory procedure.

Brenner '440 teaches a database in order to record information (Brenner '440: col. 3, lns. 31-37; col. 3, lns. 45-55; col. 8, lns. 17-29). However, Brenner '440 does not explicitly teach application to an RNA transcript profiling laboratory procedure.

Rothberg '868 teaches a method of identifying a nucleic acid sequence which includes (Rothberg '868: col. 4, lns. 59-61):

- container types including (but not limited to): an Eppendorf tube, a 96 well plate, a transcript profiling array, a freezer, a data recording media screen, and a bitmap image of a data recording media screen;
- operation types including (but not limited to): printing arrays, reading out a data recording media screen, creation of a plate for PCR, and a robot run that transfers content from one container to another;
- measurement types including (but not limited to): OD₆₀₀ of a bacterial plate, OD₂₀₀ of a DNA solution, intercalating agent quantitation of PCR product,

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agarose gel quantitation of PCR product, mRNA quantitation, and readout signal for each position in an array; and

- process types including (but not limited to): incubating, PCR cycling, denaturing arrays, prepare probe from RNA, hybridize probe with array, incubate data recording media screens, and readout data recording media screen.

It would have been obvious for a person having ordinary skill in the art to combine the database of Brenner '440 to the chemistry laboratory simulator or Greenbowe '865. The motivation to combine is on the same basis as described in Claim 1 (supra).

It would have been further obvious to apply the nucleic acid sequence method of Rothberg '868 to the Greenbowe '865 and Brenner '440 combination. The motivation to combine is suggested by Greenbowe '865 and Brenner '440 in combination which teach that using the Greenbowe '865 and Brenner '440 combination generally provides the advantages of "visual representations of science concepts" (Greenbowe '865: col. 1, lns. 10-24; col. 1, lns. 54-57). Further note that Greenbowe '865 and Brenner '440 in combination is directed to chemistry experiments and that nucleic acid sequence method of Rothberg '868 is a species of chemistry experiments. Thus the nucleic sequence method of Rothberg '868 lends itself to the chemistry laboratory simulator of the Greenbowe '865 and Brenner '440 combination.

Claim 14:

Regarding Claim 14, Greenbowe '865, Brenner '440, Rothberg '868 in combination teach all the limitations of Claim 13 (supra). Claim 14 which depends on Claim 13, recites the additional limitation strictly with regards to an intended use. Since

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an intended use limitation is not a patentable distinction, Claim 12 is rejected over Greenbowe '865, Brenner '440, and Rothberg '868 in combination. MPEP § 2106 states, "Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. The following are examples of language that may raise a question as to the limiting effect of the language in a claim:

- (A) statements of intended use or field of use,
- (B) "adapted to" or "adapted for" clauses,
- (C) "wherein" clauses, or
- (D) "whereby" clauses.

This list of examples is not intended to be exhaustive."

Further refer to In re OTTO, OTTO, AND BRITTON, 136 USPQ 458.

Furthermore, even if Claim 14 is not to be rejected under intended use, Claim 14 is rejected over prior art (Greenbowe '865, Brenner '440, and Rothberg '868 in combination) on the same basis as Claim 13 (supra).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J.D. Santos whose telephone number is 703-305-0707. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 703-308-1436. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrick J.D. Santos
February 26, 2004



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